HHS Public Access

Author manuscript

Drug Alcohol Depend. Author manuscript; available in PMC 2016 August 01.

Published in final edited form as:

Drug Alcohol Depend. 2015 August 1; 153: 364–368. doi:10.1016/j.drugalcdep.2015.05.003.

Physical Dating Violence Among Adolescents and Young Adults with Alcohol Misuse

Vijay Singh[1,2,3], **Quyen Epstein-Ngo**[3,4], **Rebecca M Cunningham**[1,3], **Sarah A. Stoddard**[3,5], **Stephen T Chermack**[4], and **Maureen A Walton**[3,4]

[1]University of Michigan Department of Emergency Medicine and Institute for Healthcare Policy and Innovation, Ann Arbor, MI 48105

[2]University of Michigan Department of Family Medicine, Ann Arbor, MI 48105

[3]University of Michigan Injury Center, Ann Arbor, MI 48105

[4]University of Michigan Department of Psychiatry and Addiction Research Center, Ann Arbor, MI 48109

[5]University of Michigan Department of Health Behavior and Health Education, School of Public Health, and School of Nursing, Ann Arbor, MI 48105

Abstract

Background—This study determined prevalence and correlates of physical dating violence (victimization or aggression) among male and female youth with alcohol misuse and seeking emergency department (ED) care.

Methods—Patients age 14–20 seeking care at a single large university-based ED completed a computerized, self-administered, cross-sectional survey. Measures included demographics, alcohol and substance use, mental health problems, health service use, peer influences, parent support, and community involvement. Bivariate and multivariate regression assessed physical dating violence correlates.

Results—Among 842 male and female youth seeking ED care who screened positive for alcohol misuse, 22.3% (n=188) reported dating violence in the past year. Multivariate analyses showed variables associated with dating violence were female gender (AOR 2.17, CI 1.46–3.22), Caucasian race (AOR 0.59, CI 0.37–0.93), receipt of public assistance (AOR 1.82, CI 1.16–2.87), AUDIT Score (AOR 1.06, CI 1.02–1.10), older age of drinking onset (AOR 0.86, CI 0.77–0.96), suicidal ideation or attempt (AOR 1.95, CI 1.13–3.37), frequency of ED visits (AOR 1.22, CI 1.05–1.46), negative peer influences (AOR 1.05, CI 1.01–1.10), and positive peer influences (AOR 0.86, CI 0.80–0.93).

Corresponding Author and address for reprints: Vijay Singh, Department of Emergency Medicine, Department of Family Medicine, University of Michigan Injury Center, 2800 Plymouth Road, Suite B10-G080, Ann Arbor, MI 48109-2800, Phone: 734-998-2472, Fax: 734-764-2020, vijaysin@umich.edu.

Contributors: RMC and MAW conceived and designed the study, obtained funding, acquired data, supervised the study, and provided administrative, technical, and material support. VS, QEN, RMC and MAW analyzed and interpreted data. VS, QEN, RMC and MAW drafted article. All authors contributed substantially to revising the article and approved the final draft. VS takes responsibility for the paper as a whole.

Conflict of interest: none of the authors has any financial interests or relationships relevant to the subject of this manuscript.

Conclusions—Nearly 1 in 4 youth with alcohol misuse seeking ED care report dating violence. Key correlates of dating violence included alcohol use severity, suicidal ideation, ED services, and peer influences. Evidence-based dating violence interventions addressing these correlates are needed for youth with alcohol misuse seeking ED care.

Keywords

dating violence; alcohol use; health services; peer influences

1. INTRODUCTION

Youth dating violence, encompassing physical acts (threw something, slapped, pulled hair, pushed, shoved, shook, kicked, hit, or punched) received by (dating victimization) or perpetrated by (dating aggression) an adolescent, is a significant public health concern, with one in 10 high school students reporting dating victimization (Eaton et al., 2012) and one in five high school students reporting dating aggression (Rothman et al., 2010). Dating violence is often reciprocal, where youth are both victims and aggressors (Epstein-Ngo et al., 2013). Alcohol use is prevalent among adolescents, with 70% of high school students in the U.S. ever having had a drink of alcohol (Eaton et al., 2012). Among youth presenting to health care with a history of alcohol use, approximately 55% reported dating violence, including victimization or aggression (Cunningham et al., 2013; Rothman et al., 2012a).

Dating violence is associated with various background characteristics and individual factors. Socio-demographics include older age, female gender, poor grades, and receipt of public assistance (Chiodo et al., 2012). Individual factors include alcohol and substance use, such as binge drinking, marijuana use, other illicit drug use, and non-medical prescription drug use (Reyes et al., 2012; Singh et al., 2014; Temple and Freeman, 2011; Vezina et al., 2011). Other individual factors associated with dating violence include mental health problems such as depression and suicidal ideation or attempt (Pena et al., 2012; Singh et al., 2014), as well as health service use factors such as number of ED or psychiatric service visits (Singh et al., 2014).

These background characteristics and individual factors can be distinguished from social factors such as negative peer influences, parental support, religious participation, and community and school activities (Chiodo et al., 2012; Foshee et al., 2011; Vezina et al., 2011). Social cognitive theory can help explain how these social factors may influence dating violence (Jouriles et al., 2012). Using social cognitive theory, we can consider other social factors such as positive peer influences that may also be associated with dating violence (Reyes et al., 2012). Based on previous research examining risk and protective factors for peer violence (Stoddard et al., 2013), we can consider other individual factors that may be associated with dating violence among youth with alcohol misuse. These factors may include older age of drinking onset, ED visits due to intoxication, treatment for drug or alcohol problems.

The relative impact of the above proposed individual and social factors, while controlling for established background characteristics and individual and social factors, has not yet been examined among youth with dating violence and alcohol misuse. To better inform future

screening and interventions for dating violence among youth with alcohol misuse, we need to understand associated background characteristics, and individual and social factors. The present study assesses prevalence and correlates of dating violence among male and female youth with alcohol misuse seeking ED care.

2. METHODS

2.1 Procedures

This paper presents a secondary analysis of Project U-Connect, a clinical trial of a brief alcohol intervention for youth age 14–20 presenting for care in the ED. This paper presents baseline data among participants screening positive on alcohol misuse as measured by the Alcohol Use Disorders Identification Test (AUDIT)-Consumption (age 14–17 ≥3; age 18–20 ≥4) (Knight et al., 2003). Trained research assistants identified potential study participants through an electronic medical record, and each subject was approached and recruited in patient treatment areas. Eligibility criteria included those not excluded prior to consent due to: too ill to be screened in the ED; seeking care for suicidal ideation, sexual assault, or child abuse; with altered mental status precluding consent; non-English speaking; or aged 17 and under with no parent/guardian available for consent. Patients that were too ill to be screened in the ED were eligible for approach during their inpatient visit if they stabilized within 72 hrs. All participants gave both oral and written consent/assent (if under 18 years old). If a participant was under 18, a parent/ legal guardian signed all informed consent documentation and the participant signed assent documentation. Parents/legal guardians did need to be present for the consent process if the patient was a minor. Of 9,228 youths aged 14 to 20 years who sought care in the ED during recruitment times, 6,532 (70.8%) were eligible to approach, 5,096 (78.0%) were approached, and 4,389 (86.1%) completed the screening survey. Among screened participants, 1054 (24.0%) met criteria for alcohol misuse. 846 (80.3%) completed the self-administered baseline survey using a touch-screen tablet computer with audio headphones during the ED visit. Participants received $1 gift for completing screening survey, and $20 compensation for completing baseline survey. Approval of study procedures was obtained from the University of Michigan's Institutional Review Board. Additional details about the U-Connect study are available elsewhere (Singh et al., 2014; Walton et al., 2014).

2.2 Measurement

2.2.1 Dating violence—Dating violence was measured using the physical abuse measures of the Conflict in Adolescent Dating Relationships Inventory (CADRI; Wolfe et al., 2001), which assesses past year victimization and aggression with a dating partner and includes items such as threw something, slapped, pulled hair, pushed, shoved, shook, kicked, hit, or punched. The 4- item subscale for victimization and parallel 4-item subscale for aggression were used to define dating violence (yes/no) as yes to any of the 8 items (Singh et al., 2014). Dating violence was further defined as victimization only, aggression only, and both victimization and aggression (mutual violence).

2.2.2 Alcohol and Substance use—Alcohol misuse was measured with the score for all ten AUDIT items (α=0.89), summed (between 0–40) to create a continuous variable

assessing past 3 month alcohol consumption, dependence, and alcohol-related problems (Saunders et al., 1993; Singh et al., 2014). Binge drinking frequency was measured as a continuous variable assessing 5 or more drinks on 1 occasion (Chung et al., 2002). Older age of drinking onset was measured as 8–20 years of age (Hingson et al., 2008) and included never use.

Marijuana use, Other illicit drug use (cocaine, methamphetamine, inhalants, hallucinogens, street opioids), and Non-medical prescription drug use (opiates, stimulants, and sedatives) frequency (never, once or twice, monthly, weekly, or daily or almost daily) in the past three months were measured as continuous variables using the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST; WHO Assist Working Group, 2002; Humeniuk et al., 2008).

2.2.3 Background Characteristics—Standard demographic measures were collected, including age, gender, race (coded as Caucasian vs. African-American/other), and receipt of public assistance (for parents or self; Singh et al., 2014).

2.2.4 Mental illness—Depression was measured with 7 items from the Brief Symptom Inventory, assessing past week depressive symptoms on a 5-point scale, and summed (between 0–28) as a continuous variable (Joosen et al., 2005). Suicidal ideation or attempt was measured as any response (yes/no) to thoughts of or attempts at self-harm in the past 30 days (Posner, 2009; Posner et al., 2007).

2.2.5 Health service use—Number of ED visits was measured as a continuous variable assessing number (0–4) of times going to an ED in the past year, and was adapted from the National Longitudinal Study of Adolescent Health (Add Health) (Bearman, 1997). ED visits due to intoxication was measured dichotomously (yes/no) and adapted from Substance Abuse Outcomes Modules (Smith et al., 2006). Psychiatric services received in past year was measured dichotomously (yes/no) from Add Health (Bearman, 1997). Ever attended drug or alcohol abuse treatment program was measured dichotomously (yes/no) from Add Health (Bearman, 1997).

2.2.6 Social factors—Failing grades were reported as D and below versus C and above (Zimmerman et al., 1997). Negative peer influences were measured with the score for 10 items, summed (between 10–50) to assess number of friends with aggressive behaviors and theft, alcohol use, and illicit substance use (Doljanac and Zimmerman, 1998). Positive peer influences were measured with the score for 4 items, summed (between 4–20) to assess number of friends with attendance at church and school, college plans, and good grades (Bryant and Zimmerman, 2002). Parental support was measured with the score for 6 items each on a 5-point scale, summed (between 6–36) to assess parental listening, support, problem solving, and encouragement (Bryant and Zimmerman, 2002; Doljanac and Zimmerman, 1998). Religious participation in services or activities was dichotomized as none vs. any (Ramirez-Valles et al., 1998). Community activities outside of school or religious programs were dichotomized as none vs. any (Ramirez-Valles et al., 1998). School club participation was dichotomized as none vs. any (Ramirez-Valles et al., 1998).

2.3. Data analysis

Data were analyzed using SAS Version 9.2 (SAS Institute, Inc., Cary, NC). Background characteristics, alcohol and substance use, mental health problems, health service use, and social factors were shown descriptively for dating violence. Note that because dating victimization and dating aggression were strongly correlated (r=0.49), and 39.4% (n=74/188) of subjects with dating violence reported both dating victimization and dating aggression, we collapsed dating victimization and dating aggression into dating violence. To address gender effects on the collapsed outcome variable combining dating victimization and dating aggression, we included gender as an independent variable. We also tested the interaction of gender on substance use and mental health problems. Bonferroni corrections indicated no significant interaction terms (data not shown). Bivariate unadjusted odds ratios for each independent variable were reported for dating violence. Adjusted odds ratios (AORs) and confidence intervals (CIs) were reported for multivariate logistic regression models comparing dating violence to no dating violence. The multivariate model was constructed based on theory and prior research, as well as those factors significant in bivariate analyses. Only one predictor from the following three pairs of predictors was included in the multivariate model due to multicollinearity: alcohol misuse and binge drinking, depression and suicidal ideation or attempt, and non-medical prescription drug use and other illicit drugs. Goodness-of-Fit p-value was calculated and indicated that the data fit the multivariate model well. AORs and CIs were reported for a multinomial logistic regression model, comparing dating victimization only and dating aggression only to mutual violence.

3. RESULTS

Comparisons between participants and refusals prior to baseline survey showed no gender differences (male 17.0%, female 16.6%); however, Caucasian and other races were more likely to refuse than African-Americans (17.7% and 19.5% vs. 3.7% respectively). Because the focus in this analysis was on dating relationships, 4 patients (0.5% of those who completed baseline survey) were excluded because of being married or having unknown marital status, leaving a final sample of 842. Of these 842 youth aged 14 to 20 years who completed the baseline survey, 22.3% (n=188) reported dating violence (victimization or aggression; Table 1). Of those with dating violence, the mean age was 18.5 years, 62.8% were female, and 71.3% were white. Compared to those without dating violence, those with dating violence had a higher mean score for AUDIT, binge drinking, marijuana use, other illicit drugs, non-medical prescription drug use, depression, and number of ED visits.

The bivariate, unadjusted odds ratios for dating violence are shown in Table 1. Variables associated with dating violence included all background characteristics except age, all substance use factors except binge drinking frequency, depression, suicidal ideation or attempt, number of ED visits, psychiatric service use, drug or alcohol treatment program attendance, grades, peer influences, parent support, community activities, and school clubs.

The multivariate, adjusted odds ratios for dating violence are shown in Table 2. Variables associated with dating violence included female gender, Caucasian race, public assistance, AUDIT score, older age at drinking onset, suicidal ideation or attempt, number of ED visits,

and positive and negative peer influences. Variables associated with dating victimization only and dating aggression only, compared to mutual violence, were female gender and public assistance.

4. DISCUSSION

The 22% prevalence of dating violence among youth with alcohol misuse seeking ED care is higher than the dating violence prevalence of 10% found in school settings, but lower than the nearly 55% prevalence of dating violence with alcohol misuse found in other ED settings (Cunningham et al., 2013; Rothman et al., 2012a). Further, the number of ED visits was significantly associated with dating violence, whereas psychiatric services and attendance at drug or alcohol treatment programs were not significantly associated with dating violence, highlighting the ED as service location that may be a site to develop interventions.

Consistent with studies showing acute alcohol intoxication increases aggression (Rothman et al., 2012b), severity of alcohol use was associated with higher odds of dating violence, while older age of drinking onset was associated with lower odds of dating violence. This association of older age of drinking onset reducing odds of dating violence is novel in the literature, and may relate to positive social or peer influences. Additionally, depression and suicidal ideation or attempt were associated with higher odds of dating violence, although it is unclear whether such mental health problems are a result of or trigger for dating violence (Rothman et al, 2010). Regardless, these findings suggest that dating violence interventions should not only take into account the role of alcohol intoxication in escalating and/or coping with dating violence, but also include screening for depression and suicide.

Although females were more likely to report dating violence than males, this finding is similar to prior research (Rothman et al., 2012a; Singh et al., 2014). Gender interactions for substance use and mental health problems were not significant, and this suggests similar relationships between substance use, mental health problems, and dating violence among males and females. However, prior work shows dating violence associations differ by gender (Carroll et al., 2011; Rothman et al., 2010; Singh et al., 2014), and these gender differences should be considered during interventions. Females were less likely to report dating victimization only, and 9 times more likely to report dating aggression only, compared to those with mutual violence. These findings underscore the importance of screening and interventions for dating violence among male and female youth in the ED. Additionally, participants receiving public assistance are more likely to report mutual violence, and less likely to report dating victimization or aggression only. The mutual violence may be a result of more negative environmental stress among those in poverty, and less individual psychosocial factors. These differences in findings by mutual violence, as compared to dating victimization only or dating aggression only, also has differential intervention implications such as couples-based programs for relationships with mutual violence.

Negative and positive peer influences had higher and lower odds, respectively, of dating violence, whereas school-based factors such as grades and clubs, community activities, and parental support were not significant. The finding of positive peer influences associated with

reduced dating violence is novel within the literature. These findings may reflect the importance of peers during adolescence and emerging adulthood, and the results suggest that interventions can harness peer influences to reduce dating violence. Further research is needed to understand the role of peer influences in dating violence, and such work will inform future intervention development.

4.1. Limitations

There are several limitations to this study. First, this study includes data from participants recruited at a single suburban ED and may not be generalizable to other settings. The study assessed physical abuse only, and further research should assess emotional and sexual abuse among youth. Due to the limitations of the larger randomized controlled trial, the study did not include individuals seeking acute medical care for suicidal ideation or sexual assault. Those are study subjects who may have been victims of dating violence. This selection process may have reduced the association of dating violence with suicidal ideation. The finding that females are more likely to report dating aggression may have been due to subjects with sexual assault and likely related dating victimization being excluded from the study. As in all cross-sectional studies, the data show associations, not causation. The time frames for various independent variables (AUDIT score in past 3 months, depression in past week, suicidal ideation or attempt in past 30 days) are different than that of past year dating violence. Finally, this analysis used self-reported data, which may underreport dating violence. However, when privacy is ensured and participants use self-administered computerized assessments, many previous studies support the reliability and validity of self-report as used in this study (Brener et al., 2003).

4.2. Conclusions

This study is a novel examination of a broad array of individual and social factors, considered in the context of known background characteristics, among youth with alcohol misuse seen in the ED setting. Even after adjusting for background characteristics, alcohol use severity, and older age of drinking onset, we see the relative importance of ED health service use, suicidal ideation, and peer influences. The findings suggest that the ED is an important location to identify youth with dating violence and alcohol misuse. Interventions for dating violence and alcohol misuse should include screening for suicidal ideation and build on the protective factors of positive peer relationships.

Acknowledgements

The authors acknowledge Carrie Smolenski-Bourque, MS, and Lynn Massey, LMSW, for assisting with this project; Sonia Kamat, BDS, MS, and Linping Duan, MS, for statistical support; and the support of staff and patients at the University of Michigan.

Role of funding source: This project was supported by National Institute on Alcoholism and Alcohol Abuse (grant AA018122), the Centers for Disease Control and Prevention (grant 5R49CE002099), and the University of Michigan Injury Center.

REFERENCES

Bearman, PS.; JJ. [accessed on 12/11/14] The National Longitudinal Study of Adolescent Health: research design. 1997. http://www.cpc.unc.edu/projects/addhealth/codebooks/wave1

Brener ND, Billy JO, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. J. Adolesc. Health. 2003; 33:436–457. [PubMed: 14642706]

Bryant AL, Zimmerman MA. Examining the effects of academic beliefs and behaviors on changes in substance use among urban adolescents. J. Educ. Psychol. 2002; 94:621–637.

Carroll BC, Raj A, Noel SE, Bauchner H. Dating violence among adolescents presenting to a pediatric emergency department. Arch. Pediatr. Adolesc. Med. 2011; 165:1101–1106. [PubMed: 22147777]

Chiodo D, Crooks CV, Wolfe DA, McIsaac C, Hughes R, Jaffe PG. Longitudinal prediction and concurrent functioning of adolescent girls demonstrating various profiles of dating violence and victimization. Prev. Sci. 2012; 13:350–359. [PubMed: 21769657]

Chung T, Colby SM, Barnett NP, Monti PM. Alcohol use disorders identification test: factor structure in an adolescent emergency department sample. Alcohol. Clin. Exp. Res. 2002; 26:223–231. [PubMed: 11964562]

Cunningham RM, Whiteside LK, Chermack ST, Zimmerman MA, Shope JT, Bingham CR, Blow FC, Walton MA. Dating violence: outcomes following a brief motivational interviewing intervention among at-risk adolescents in an urban emergency department. Acad. Emerg. Med. 2013; 20:562–569. [PubMed: 23758302]

Doljanac RF, Zimmerman MA. Psychosocial factors and high-risk sexual behavior: race differences among urban adolescents. J. Behav. Med. 1998; 21:451–467. [PubMed: 9836131]

Eaton DK, Kann L, Kinchen S, Shanklin S, Flint KH, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Whittle L, Lim C, Wechsler H. Youth risk behavior surveillance - United States, 2011. MMWR Surveill. Summ. 2012; 61:1–162. [PubMed: 22673000]

Epstein-Ngo QM, Cunningham RM, Whiteside LK, Chermack ST, Booth BM, Zimmerman MA, Walton MA. A daily calendar analysis of substance use and dating violence among high risk urban youth. Drug Alcohol Depend. 2013; 130:194–200. [PubMed: 23219602]

Foshee VA, Reyes HL, Ennett ST, Suchindran C, Mathias JP, Karriker-Jaffe KJ, Bauman KE, Benefield TS. Risk and protective factors distinguishing profiles of adolescent peer and dating violence perpetration. J. Adolesc. Health. 2011; 48:344–350. [PubMed: 21402262]

Hingson RW, Heeren T, Edwards EM. Age at drinking onset, alcohol dependence, and their relation to drug use and dependence, driving under the influence of drugs, and motor-vehicle crash involvement because of drugs. J. Stud. Alcohol Drugs. 2008; 69:192–201. [PubMed: 18299759]

Humeniuk R, Ali R, Babor TF, Farrell M, Formigoni ML, Jittiwutikarn J, de Lacerda RB, Ling W, Marsden J, Monteiro M, Nhiwatiwa S, Pal H, Poznyak V, Simon S. Validation of the Alcohol, Smoking And Substance Involvement Screening Test (ASSIST). Addiction. 2008; 103:1039–1047. [PubMed: 18373724]

Joosen M, Garrity TF, Staton-Tindall M, Hiller ML, Leukefeld CG, Webster JM. Predictors of current depressive symptoms in a sample of drug court participants. Subst. Use Misuse. 2005; 40:1113–1125. [PubMed: 16040372]

Jouriles EN, McDonald R, Mueller V, Grych JH. Youth experiences of family violence and teen dating violence perpetration: cognitive and emotional mediators. Clin. Child Fam. Psychol. Rev. 2012; 15:58–68. [PubMed: 22160838]

Knight JR, Sherritt L, Harris SK, Gates EC, Chang G. Validity of brief alcohol screening tests among adolescents: a comparison of the AUDIT, POSIT, CAGE, and CRAFFT. Alcohol. Clin. Exp. Res. 2003; 27:67–73. [PubMed: 12544008]

Pena JB, Matthieu MM, Zayas LH, Masyn KE, Caine ED. Co-occurring risk behaviors among White, Black, and Hispanic US high school adolescents with suicide attempts requiring medical attention, 1999–2007: implications for future prevention initiatives. Soc. Psychiatry Psychiatr. Epidemiol. 2012; 47:29–42. [PubMed: 21153018]

Posner, K. [accessed on 12/11/14] C-CASA And C-SSRS In CNS Clinical Trials: Development And Implementation. 2009. http://www.iom.edu/~/media/Files/Activity%20Files/Research/NeuroForum/Suicidality%20meet ing/web%20files/Posner.ashx

Posner K, Oquendo MA, Gould M, Stanley B, Davies M. Columbia Classification Algorithm of Suicide Assessment (C-CASA): classification of suicidal events in the FDA's pediatric suicidal risk analysis of antidepressants. Am. J. Psychiatry. 2007; 164:1035–1043. [PubMed: 17606655]

Ramirez-Valles J, Zimmerman MA, Newcomb MD. Sexual risk behavior among youth: modeling the influence of prosocial activities and socioeconomic factors. J. Health Soc. Behav. 1998; 39:237–253. [PubMed: 9785696]

Reyes HLM, Foshee VA, Bauer DJ, Ennett ST. Heavy alcohol use and dating violence perpetration during adolescence: family, peer and neighbourhood violence as moderators. Prev. Sci. 2012; 13:340–349. [PubMed: 21494801]

Rothman EF, Johnson RM, Azrael D, Hall DM, Weinberg J. Perpetration of physical assault against dating partners, peers, and siblings among a locally representative sample of high school students in Boston, Massachusetts. Arch. Pediatr. Adolesc. Med. 2010; 164:1118–1124. [PubMed: 21135340]

Rothman EF, Stuart GL, Winter M, Wang N, Bowen DJ, Bernstein J, Vinci R. Youth alcohol use and dating abuse victimization and perpetration: a test of the relationships at the daily level in a sample of pediatric emergency department patients who use alcohol. J. Interpers. Violence. 2012; 27:2959–2979. [PubMed: 22550149]

Rothman EF, Reyes LM, Johnson RM, LaValley M. Does the alcohol make them do it? dating violence perpetration and drinking among youth. Epidemiol. Rev. 2012; 34:103–119. [PubMed: 22128086]

Saunders JB, Aasland OG, Babor TF, Fuente JR, Grant M. Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. Addiction. 1993; 88:791–804. [PubMed: 8329970]

Singh V, Walton MA, Whiteside LK, Stoddard S, Epstein-Ngo Q, Chermack ST, Cunningham RM. Dating violence among male and female youth seeking emergency department care. Ann. Emerg. Med. 2014; 64:405–412 e401. [PubMed: 24993689]

Smith GR, Burnam MA, Mosley CL, Hollenberg JA, Mancino M, Grimes W. Reliability and validity of the substance abuse outcomes module. Psychiatr. Serv. 2006; 57:1452–1460. [PubMed: 17035565]

Stoddard SA, Whiteside L, Zimmerman MA, Cunningham RM, Chermack ST, Walton MA. The relationship between cumulative risk and promotive factors and violent behavior among urban adolescents. Am. J. Community Psychol. 2013; 51:57–65. [PubMed: 22744013]

Temple JR, Freeman DH Jr. Dating violence and substance use among ethnically diverse adolescents. J. Interpers. Violence. 2011; 26:701–718. [PubMed: 20587475]

Vézina J, Hébert M, Poulin F, Lavoie F, Vitaro F, Tremblay RE. Risky lifestyle as a mediator of the relationship between deviant peer affiliation and dating violence victimization among adolescent girls. J .Youth Adolesc. 2011; 40:814–824. [PubMed: 21080045]

Walton MA, Chermack ST, Blow FC, Ehrlich PF, Barry KL, Booth BM, Cunningham RM. Components of brief alcohol interventions for youth in the emergency department. 2014 Subst. Abuse epub ahead of print.

WHO Assist Working Group. The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): development, reliability and feasibility. Addiction. 2002; 97:1183–1194. [PubMed: 12199834]

Wolfe DA, Scott K, Reitzel-Jaffe D, Wekerle C, Grasley C, Straatman AL. Development and validation of the Conflict in Adolescent Dating Relationships Inventory. Psychol. Assess. 2001; 13:277–293. [PubMed: 11433803]

Zimmerman MA, Copeland LA, Shope JT, Dielman TE. A longitudinal study of self-esteem: implications for adolescent development. J. Youth Adolesc. 1997; 26:117–141.

Table 1

Bivariate regression of association of Background Characteristics, Individual Factors, Social Factors, and Dating Violence Among Adolescents and Young Adults with Alcohol Misuse (N=842)

	Dating Violence, N=188 (22.3%)	No Dating Violence, N=654 (77.7%)	Unadjusted Odds Ratio (95%Confidence Interval)
Background Characteristics			
Age (mean, S.D.)	18.5 (1.4)	18.6 (1.4)	0.95 (0.84–1.06)
Gender (Female)	**118 (62.8%)**	**290 (44.3%)**	**2.12 (1.52–2.95)*** **
Race (Caucasian)	**134 (71.3%)**	**536 (82.0%)**	**0.54 (0.38–0.79)*** **
Public assistance	**69 (36.7%)**	**96 (14.7%)**	**3.37 (2.33–4.87)*** **
Individual Factors			
AUDIT score (mean, S.D.)	**12.3 (6.6)**	**9.2 (5.1)**	**1.09 (1.06–1.12)*** **
Binge drinking, frequency (mean, S.D.)	1.9 (0.9)	1.8 (0.9)	1.19 (0.99–1.43)
Increasing age of onset of drinking (mean, S.D.)	**14.8 (2.2)**	**15.9 (1.8)**	**0.77 (0.71–0.84)*** **
Marijuana use, frequency (mean, S.D.)	**3.2 (2.2)**	**2.3 (2.1)**	**1.06(1.04–1.07)*** **
Other illicit drugs, use frequency (mean, S.D.)	**1.3 (3.0)**	**0.5 (1.4)**	**1.24(1.13–1.35)*** **
Non-medical prescription drug use, frequency (mean, S.D.)	**2.1 (3.4)**	**0.8 (2.1)**	**1.19(1.12–1.26)*** **
Depression score (mean, S.D.)	**7.4 (5.8)**	**4.4 (4.9)**	**1.10 (1.07–1.13)*** **
Suicidal ideation or attempt	**39 (20.7%)**	**63 (9.6%)**	**2.46 (1.58–3.80)*** **
Number of ED visits, past year (mean, S.D.)	**2.1 (1.2)**	**1.7 (1.0)**	**1.44 (1.25–1.67)** **
ED visits due to intoxication	15 (8.0%)	57 (8.7%)	0.91 (0.50–1.64)
Psychiatric services, past year	**59 (31.4%)**	**155 (23.7%)**	**1.47 (1.03–2.10)** **
Ever attended drug or alcohol abuse treatment program	**25 (13.3%)**	**55 (8.4%)**	**1.67 (1.00–2.76)** **
Social Factors			
Grades (D and below)	**32 (17.0%)**	**37 (5.7%)**	**3.40 (2.05–5.62)*** **
Negative peer influences (mean, S.D.)	**23.3 (6.4)**	**19.8 (4.8)**	**1.12 (1.09–1.16)*** **
Positive peer influences (mean, S.D.)	**10.6 (3.1)**	**12.4 (2.7)**	**0.80 (0.76–0.85)*** **
Parental support (mean, S.D.)	**7.1 (2.5)**	**7.8 (2.1)**	**0.88 (0.82–0.94)*** **
Religious	87 (46.3%)	311 (47.6%)	0.95 (0.69–1.32)
Community activities	**93 (49.5%)**	**420 (64.2%)**	**0.55 (0.39–0.76)*** **
School clubs	**111 (59.0%)**	**509 (77.8%)**	**0.41 (0.29–0.58)*** **

Notes: S.D. is standard deviation.

* p<0.05,

** p<0.01,

*** p<0.001.

-Of 846 in sample, we excluded 2 due to marriage and 2 whose marital status was unknown.
-Frequency: past 3 month use: never, once or twice, monthly, weekly, or daily or almost daily.
-Illicit drug use besides marijuana includes cocaine, methamphetamine, inhalants, hallucinogens, and street opioids.
-Prescription drug use includes opiates, stimulants, and sedatives

Table 2

Multivariate and multinomial logistic regression of association of Background Characteristics, Social Factors, Individual Factors, and Dating Violence Among Adolescents and Young Adults with Alcohol Misuse

	Model 1, N=842+	Model 2, N=188++	
	Dating Violence (n=188), A.O.R. (95% C.I.)	**Dating Victimization only (n=63), A.O.R. (95% C.I.)**	**Dating Aggression only (n=51), A.O.R. (95% C.I.)**
Background Characteristics			
Age	1.10 (0.95–1.27)	0.90 (0.66–1.21)	0.92 (0.67–1.25)
Gender (Female)	**2.17 (1.46–3.22)*** **	**0.29 (0.12–0.68)** **	**9.17 (2.58–32.62)*** **
Race (White vs. African American/other)	**0.59 (0.37–0.93)***	0.67 (0.19–2.33)	1.83 (0.57–5.89)
Public Assistance	**1.82 (1.16–2.87)** **	**0.38 (0.15–0.97)***	**0.35 (0.14–0.90)***
Grades (D and below vs. C and above)	0.80 (0.40–1.60)	0.90 (0.27–2.98)	0.83 (0.24–2.91)
Individual Factors			
AUDIT Score	**1.06 (1.02–1.10)** **	0.93 (0.86–1.00)	1.02 (0.94–1.09)
Older age of drinking onset	**0.86 (0.77–0.96)** **	1.11 (0.89–1.37)	0.99 (0.79–1.23)
Marijuana Use, frequency	1.03 (0.93–1.14)	0.86 (0.70–1.05)	0.94 (0.75–1.18)
Non-medical Prescription drug use, frequency	1.05 (0.97–1.13)	1.08 (0.94–1.24)	0.96 (0.82–1.13)
Suicidal Ideation or Attempt	**1.95 (1.13–3.37)***	0.58 (0.20–1.67)	1.11 (0.38–3.29)
ED visits, past year	**1.22 (1.01–1.46)***	1.31 (0.91–1.88)	1.26 (0.86–1.85)
Psychiatric services, past year	0.74 (0.47–1.17)	0.78 (0.32–1.93)	0.96 (0.39–2.35)
Ever attended drug or alcohol abuse treatment program	0.49 (0.24–1.02)	2.32 (0.57–9.41)	1.00 (0.20–4.92)
Social Factors			
Negative Peer Influences	**1.05 (1.01–1.10)***	1.05 (0.97–1.14)	0.95 (0.88–1.04)
Positive Peer Influences	**0.86 (0.80–0.93)*** **	1.06 (0.91–1.24)	0.96 (0.81–1.12)
Parental Support	1.02 (0.93–1.11)	0.95 (0.80–1.12)	1.09 (0.91–1.30)
Community Activities	0.97 (0.63–1.50)	1.56 (0.62–3.93)	1.15 (0.44–2.99)
School Clubs	1.22 (0.74–2.00)	1.12 (0.44–2.87)	1.38 (0.54–3.55)

Notes:

+ Model 1: No dating violence (n=654) is reference group. Hosmer and Lemeshow Goodness of Fit Test Chi-square value 11.31, p-value 0.18. Variance inflation factors for all independent variables <1.7

++ Model 2: Both dating victimization and aggression (n=74) is reference group. Wald test Chisquare value 48.4551, p-value 0.08.

* p<0.05,

** p<0.01,

*** p<0.001